

Abstract

A passive device is provided for reducing vibration and noise in a hydraulic system. The passive device includes a tubular element having an open end and a closed end. The open end of the tubular element is adapted to be attached to a fluid conduit carrying pressurized fluid in the system so that the tube fills with the pressurized fluid. The area and length of the tube are such that the fluid within the tube has a resonant condition at a frequency that is the same as at least one frequency of the vibration and noise that is to be reduced or removed in the hydraulic system. A helicopter is also provided having a hydraulic system of pressurized fluid for reducing the transfer of vibrations from the transmission to the airframe including the passive device. Several such passive devices may be applied at selected locations in a hydraulic system for effectively reducing high frequency vibration and noise due to, for example, helicopter transmission gear clashing.